



## NON-TITLE V TECHNICAL SUPPORT DOCUMENT

**PERMIT NUMBER:** 150063

**BUSINESS NAME:** Shutterfly, Inc.

**SOURCE TYPE:** Graphic Arts

**PERMIT ENGINEER:** Lizabeth Gomez

**App. ID(s):** 408355

**Revision(s):** 0.0.0.0

**Revision Type(s):** New

**Date Prepared:** 08/31/2015

**BACT:** No **40 CFR**  
**Part 63/61 :** No

**40 CFR**  
**Part 60 :** No **SYNTH MINOR:** No

**AIRS:** No

**DUST PLAN REQUIRED:** No

**DUST PLAN RECEIVED:** No

**O&M PLAN REQUIRED:** Yes

**O&M PLAN RECEIVED:** Yes

**PORTABLE SOURCE:** No

**SITE VISIT:** Yes 08/17/2015

### PROCESS DESCRIPTION:

Shutterfly, Inc. offers digital products and services and will be opening a graphic arts facility in Tempe, AZ. The digital printing process Shutterfly conducts is liquid electrophotographic printing using HP Indigo Digital Presses. The presses use HP ElectroInk, a paste-like ink contained in a tubular cartridge that is diluted with imaging oil. Each HP Indigo 6000 and 7000 Series Printing Press is equipped with a refrigerated chiller to regulate the ink and ensure the imaging oil does not overheat. In addition to controlling the temperature, the chiller is a component of the printer's oil recycling system. The oil recycling system reduces the facility's need for additional imaging oil by capturing and condensing some of the oil vapors into a liquid, which minimizes the volatile organic compounds (VOC) emitted.

In addition to the HP Indigo presses, the facility has digital inkjet printers (Kirk Rudy), UV coaters (Harris Bruno & Tec Lighting) and a case binding machine (Muller Horauf), which use inks, coatings and adhesives that contain VOCs.

### PERMIT HISTORY:

Date Received	Revision Number	Description
07/06/2015	0.0.0.0	Submitted application for a new Non-Title V permit for a graphic arts operation in Tempe, AZ.

**PURPOSE FOR APPLICATION:** New facility

### A. APPLICABLE COUNTY REGULATIONS:

Rule 100: General Provisions and Definitions

Rule 200: Permit Requirements

Rule 220: Non-Title V Permit Provisions

Rule 241: Permits for New Sources and Modifications to Existing Sources

Rule 280: Fee Table A (Printing Facilities  $\geq$  25 TPY Potential Uncontrolled VOC)

Rule 300: Visible Emissions

Rule 337: Graphic Arts

All of the facility's graphic arts operations fall under the partial exemption of Rule 337 §103.2 since the Permittee only performs digital printing and radiation-cured coating. As a result, the source is exempt from the VOC limits of Rule 337 and only the work practices listed in §306 and the recordkeeping requirements in §502.5 apply.

### B. APPLICABLE FEDERAL REGULATIONS:

Based on the information provided in the permit application, the facility is not subject to any federal regulations.

### C. AIR POLLUTION CONTROL EQUIPMENT/EMISSION CONTROL SYSTEM(s):

All the HP Indigo 6000 and 7000 Series printing presses (14 units total) are equipped with a Lauda Ultra Cool Chiller. The chiller is part of oil recycling system incorporated into the HP Indigo printing presses. The oil recycling system works by blowing the oil vapors into the chiller where they condense, along with water vapors from the ambient air, back into a liquid. The printer's recycling system separates the oil from the water in order for the imaging oil to be reused or dispose.

The facility is required to have an Operation and Maintenance (O&M) plan, since the uncontrolled emissions without the condenser would exceed the yearly VOC BACT threshold of 25 TPY. (O&M Plan approval pending)

### D. EMISSIONS:

VOC Emissions were estimated according to the material list provided in Section J of the Non-Title V permit application. The calculations were based on a material balance by multiplying the annual usage (minus amount reclaimed for disposal) of all inks, oils, coatings, adhesives, cleaners, and any other VOC-containing materials used by their respective VOC content.

To determine the VOC emissions from the HP Indigo printing presses, the individual usage of each ink, imaging agent, recycling agent, and imaging oil was summed to produce a cumulative total. The amount reclaimed for disposal was then subtracted from the total usage. Emissions were then determined by multiplying the difference times the highest VOC content among the materials used.

Based on this approach and after a 200% growth factor for operational flexibility, the facility emits the following:

#### FACILITY-WIDE ALLOWABLE EMISSIONS

Pollutants	<sup>†</sup> Facility-wide Daily Emissions	<sup>††</sup> Facility-wide Annual Emissions
VOC	120 lbs/day	18.67 TPY

<sup>†</sup> Daily emissions based on 312 operational days per year

<sup>††</sup> 200% growth factor used to determine annual allowable emissions



150063 Emissions

<b>Graphic Arts VOC Emissions</b>					
<b>Company Name:</b> Shutterfly, Inc.					
<b>Permit Number:</b> 150063					
Material List (Non-Title V Application Section J, #2)					
Materials for HP Indigo 6000 & 7000 series presses:					
SDS	Material	Individual Usage	VOC Content	VOC PTE	Reclaimed Waste
10-1012-03	Ink, HP, Electroink, Black, 7xxx	1,438 gal/yr	640 g/liter	7,679 lbs/yr	8,340 gal/yr
10-1013-03	Ink, HP, Electroink, Cyan, 7xxx	1,702 gal/yr	635 g/liter	9,018 lbs/yr	
10-1014-03	Ink, HP, Electroink, Magenta, 7xxx	1,733 gal/yr	650 g/liter	9,400 lbs/yr	
10-1015-03	Ink, HP, Electroink, Yellow, 7xxx	1,604 gal/yr	620 g/liter	8,298 lbs/yr	
10-1018-03	Agent, HP, Imaging, 4.2, 7xxx	56 gal/yr	620 g/liter	290 lbs/yr	
10-1011-04	Agent, HP, Recycling, 7xxx	122 gal/yr	790 g/liter	804 lbs/yr	
10-1011-05	Oil, HP, Imaging, 7xxx	3,087 gal/yr	770 g/liter	19,834 lbs/yr	
10-1012-04	Ink, HP, Electroink, Calibration, Black	0 gal/yr	640 g/liter	0 lbs/yr	
10-1013-04	Ink, HP, Electroink, Calibration, Cyan	3 gal/yr	635 g/liter	13 lbs/yr	
10-1014-04	Ink, HP, Electroink, Calibration, Magenta	0 gal/yr	650 g/liter	0 lbs/yr	
10-1015-04	Ink, HP, Electroink, Calibration, Yellow	0 gal/yr	620 g/liter	0 lbs/yr	
Total Usage:		9,745 gal/yr		55,337 lbs/yr	
			<u>Group VOC Content</u>	<u>Actual VOC Emitted</u>	
Usage Minus Waste:		1,405 gal/yr	790 g/liter	9,259 lbs/yr	
All other graphics arts materials:					
SDS	Material	Usage	VOC Content	VOC Emissions	
10-1004-02	Coating, 3.2% Sapphire, 55 Gal Drum, P5753	1,650 gal/yr	0.01 lbs/gal	17 lbs/yr	
510-1016-01	Ink, HP, Uncoated, UHG, PMS 301, PD3-0301-14	1,024 lbs/yr	0.788 lbs/lb	807 lbs/yr	
10-1071-01	Ink, HP, Black, CQ862, Kirk Rudy	1 gal/yr	240 g/liter	2 lbs/yr	
10-1072-01	Ink, HP, CQ862, Kirk Rudy	3 gal/yr	242 g/liter	5 lbs/yr	
10-1073-01	Ink, HP, CQ862, Kirk Rudy	0 gal/yr	243 g/liter	0 lbs/yr	
10-1074-01	Ink, HP, CQ862, Kirk Rudy	0 gal/yr	245 g/liter	0 lbs/yr	
60-1019-01	Alcohol, IPA	288 gal/yr	6.58 lbs/gal	1,895 lbs/yr	
10-1002-02	UV Gloss Coating UV-9020 5 gallon 40# pail	43,440 lbs/yr	0.06%	26 lbs/yr	
10-1008-01	UV matte coating UV-9790 5 gallon 40# pail	3,120 lbs/yr	0.08%	2 lbs/yr	
10-1032-01	Adhesive, Protein, Case Making	8,712 lbs/yr	5%	436 lbs/yr	
				3,190 lbs/yr	
Facility-wide VOC Emissions:				12,449 lbs/yr	6.22 TPY
Allowable VOC Emissions (200 % growth factor):				37,345.61 lbs/yr	18.67 TPY

#### E. HAP EMISSION IMPACTS:

Based on the information provided in the permit application, the facility emits insignificant amount of HAPs; therefore, SCREEN modeling was not performed per the Department's HAPs policy.

#### F. PERFORMANCE TESTING:

The facility does not have any emission control equipment or systems that require performance testing.

#### G. REGULATORY REQUIREMENTS AND MONITORING:

- The source does not qualify to operate under the General Permit for Graphic Arts since the uncontrolled VOC emissions are greater than 25 TPY and utilizes a condenser to reduce VOC emissions.
- Permit Conditions –
  - Condition 1* is the allowable VOC emissions limits for the facility that will keep the facility from exceeding any regulatory threshold, such as BACT.
  - Condition 2* are the work practice requirements for Rule 337 §306.
  - Conditions 3 and 4* require that the Permittee properly operate and maintain the condenser to control VOC emissions when utilizing the HP Indigo printing presses as a Reasonable Available Control Technology (RACT) requirement per Rule 241§302.
  - Condition 5* are the recordkeeping requirements per Rule 337 §502 and Rule 220 §302.7



## NON-TITLE V COMPLETENESS DETERMINATION CHECKLIST

**Items 1-15 Front page:** Items 1 to 15 (14 for Renewals) must be completed.

*Notes to engineer:*

- For renewal applications the source must either answer 'No' to questions 2-5 or submit an application for a permit modification.
- Item 8: Many applicants do not know the SIC code or NAICS code for their industry. For a new application the code can be obtained by doing an on-line search. <http://www.osha.gov/pls/imis/sicsearch.html>
- Items 5, 7 and 14: These may be the same for many applicants.

Complete: ☒ Incomplete: ☐

**Item 16:** A simple site diagram has been included, preferably on a standard size paper. Detailed blueprints or construction drawings are not required.

Complete: ☒ Incomplete: ☐ N/A: ☐

**Item 17:** A simple process flow diagram on a standard size paper is preferred. A process flow diagram may not be needed for some small businesses.

Complete: ☒ Incomplete: ☐ N/A: ☐

**Item 18:** An O&M plan is required only for a control device. An O&M plan is not required for a spray booth. Instead of including the O&M plan with the application, an applicant may submit it after receiving the permit.

Complete: ☒ Incomplete: ☐ N/A: ☐

**Item 19:** A dust control plan, if required, must accompany the permit application. The plan will be reviewed and approved by the dust compliance group.

Complete: ☐ Incomplete: ☐ N/A: ☒

**Item 20:** The applicant needs to complete only those sections of the permit application that are applicable.

Complete: ☒ Incomplete: ☐ N/A: ☐

*Notes to engineer:*

- Concerning Section Z: Many applicants will not be able to perform these engineering calculations. We will accept the permit application with a blank Section Z.

Instructions for completing Sections A, B, C, D, E-1, E-2, F, G, H, I, J, K-1, K-2, K-3, K-4, L, M, X-1, X-2, Y and Z of the permit application are included at the beginning of each section and are self-explanatory.

In general, a material safety data sheet (MSDS) is required for each chemical used, stored or processed at the facility. Exceptions are for very common materials, such as gasoline, diesel, acetone, etc.

Business name: Shutterfly, Inc.

Permit number: 150063

Completeness review completed.

Application determined to be:

Complete: ☒ Incomplete: ☐

Permit Engineer: Lizabeth Gomez

Date: 08/21/2015